Abstract

High Power Semiconductor Laser Diode

Semiconductor laser diodes, particularly high power AlGaAs-based ridge-waveguide laser diodes, are often used in opto-electronics as so-called pump laser diodes for fiber amplifiers in optical communication lines. To provide the desired high power output and stability of such a laser diode and avoid degradation during use, the present invention concerns an improved design of such a device, the improvement in particular significantly minimizing or avoiding (front) end section degradation of such a laser diode and significantly increasing long-term stability compared to prior art designs. This is achieved by establishing one or two "unpumped end sections" of the laser diode. One preferred way of providing such an unpumped end section at one of the laser facets (10, 12) is to insert an isolation layer (11, 13) of predetermined position, size, and shape between the laser diode's semiconductor material and the usually existing metallization (6).

(Fig. 3)